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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.  
530 VIRGINIA ROAD  
P.O. BOX 9133  
CONCORD, MA 01742-9133

EXAMINER
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SAXENA, AKASH

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/942,096	<b>Applicant(s)</b> EL ATA, NABIL A. ABU	
	<b>Examiner</b> Akash Saxena	<b>Art Unit</b> 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27<sup>th</sup> September 2005 has been entered. *Claims 1-23 are currently pending in this application.*

***Response to Arguments***

2. Applicant has argued that the EUROEXPERT reference is directed to bottoms-up approach, which is in stark contrast to the top down approach. Examiner respectfully disagrees with the applicant. There is no evidence presented that the instant invention is directed to top-down approach. Amendments to the claims to that effect are not accompanied by any support from the specification.

MPEP 608.01(o) [R-3] "Basis for Claim Terminology in Description" states:

New claims and amendments to the claims already in the application should be scrutinized not only for new matter but also for new terminology. While an applicant is not limited to the nomenclature used in the application as filed, he or she should make appropriate amendment of the specification whenever this nomenclature is departed from by amendment of the claims so as to have clear support or antecedent basis in the specification for the new terms appearing in the claims. This is necessary in order to insure certainty in construing the claims in the light of the specification, Ex parte Kotler, 1901 C.D. 62, 95 O.G. 2684 (Comm'r Pat. 1901). See 37 CFR 1.75, MPEP §608.01(i) and § 1302.01. Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced. The specification should be objected to if it does not provide proper antecedent basis for the claims by using form paragraph 7.44.

Applicant's argument is found to be unpersuasive and rejection is maintained.

3. Regarding applicant's arguments against IEEE article by Robert White, applicant argues that White is incapable of considering continuous service. As understood from the specification "continuous service" means iterative process (Specification: [0021]). White teaches continuously repeating the six-sigma steps till the desired high quality process is achieved (White: Pg. 31 – Six steps to six sigma – step 6). Further, applicant argues that white does not "predict performance", to which the examiner disagrees. White teaches predicts performance as bell curve of Central Limit Theorem (White: Pg.29).

Further, applicant argues that the instant invention uses performance matrix without the need for training, process equipment or developing partnerships. Although the methodology disclosed by White is localized to manufacturing, the concept of six-sigma demonstrated is global, applicable to any system designed to enrich the performance. Hence the argument made above by applicant does not necessarily preclude the instant invention from the teachings of White. It is further pointed out that the rejection under White is made under 35 USC 103 on the basis of obviousness. Applicant's arguments are found to unpersuasive and rejections for White are maintained.

4. Regarding applicant's arguments against Hartley reference, applicant argues that Hartley does not disclose the use of multilayer mathematical model of the proposed system architecture. Examiner agrees with the applicant that Hartley does not teach use of multilayer mathematical model of the proposed system architecture. However Hartley reference is used to provide a teaching of interaction between various layers. This teaching is used to show that mapping between the different layers can be

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present attain a business objective (Hartley: Col. 5 Lines 12-32). The concept demonstrated was the interlayer communication, which could be between two layer or multiple layers. Making the interaction based on the mathematical model does not teach uniquely over the interaction cited by the Harley.

Further, Harley argues that Harley discloses the same data but at different levels of abstraction, which is not the same as present invention of multilayered mathematical model representing different data at each layer. Examiner agrees with the applicant, but the various levels of abstractions do not necessarily present same data. Further, there is no limitation present in the claims that layers present different data. Applicant's arguments are found to unpersuasive and rejections for Harley are maintained.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-10, 11-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 1-10

Claim 1 appears to recite an abstract idea rather than a practical application of that idea. The result of the method is determining modifications to a proposed architecture by modeling performance metrics and comparing them to a set of requirements. Determining modifications to a proposed system is not a tangible result. Instead, it's a thought or a process within a computer. It has not been brought into the realm of a real world practical application.

Claims 2-10 are rejected based on their dependency on claim 1.

Regarding Claims 11-20

Claim 11 recites a system. For a system to be able to realize any functionality of the software recited in the claim, hardware must be present. Otherwise, the system is just a system of software, per se, and non-statutory. The system of claim 11 includes a design (non-functional descriptive material), a series of modules (functional descriptive material) and an engine (functional descriptive material). As such, the system of claim 11 is directed to a combination of functional and non-functional descriptive material, lacking any hardware necessary to realize the functionality of the modules and engine.

Claims 12-20 are rejected based on their dependency on claim 11.

***Claim Rejections - 35 USC § 112¶1***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 6. Claim 1-10, 11-20, 21, 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

The amended claim 1 introduces the limitation of “modeling being [done] in a manner uninfluenced by a prior existing related system architecture and measured performance thereof”. This limitation is regarded as new subject matter as the original specification submitted does not contain this disclosure. Further, an objection is raised regarding lack of antecedent basis for the limitation above as it is not present in the specification. Further, contrary to the above limitation support is found that new proposed architectural model is influenced by the existing system which contains the existing applications and business design processes.

Specification: Pg.7 Lines 14-17 states:

“[0014][...] The initial model is constructed by simply mapping the available business applications to corresponding business processes defined in the business process design. Thus, the system architect is relieved from defining the supporting hardware and software components.”

Claims 11, 21, 22 and 23 are rejected for the same reasons as claim 1 above.

Dependent claims 2-10, 12-20 are rejected based on their dependence from their respective parent claims.

***Claim Interpretation***

7. Regarding claim 1: As indicated that in the 35 USC 112, first paragraph rejection earlier that there is no support found for the “constructing and modeling being [done] in a manner uninfluenced by a prior existing related system architecture”. The “uninfluenced” as best interpreted is the two architectures are “unmapped” or “not corresponding one to one”. In either case the functionality remains same but implementation changes.
8. EUROEXPERT makes numerous references to re-engineering (EUROEXPERT Fig on page 2; Phase 2). The term “re-engineering” is interpreted by the applicant as “being influenced by previous engineering”, hence the limitation added to the claim 1. Examiner would like to clarify that “re-engineering”<sup>1</sup> according to Wikipedia web dictionary assumes restarting a design from clean state, hence EUROEXPERT reference teaches design from scratch.

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<sup>1</sup> Wikipedia: definition Reengineering (<http://en.wikipedia.org/wiki/Reengineering>)



***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

- 9. Claims 1-5, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over EUROEXPERT - Best Practices: French Social Security - UNEDIC dated 1992 in view of IEEE article – “An Introduction To Six Sigma With Design Example” by Robert White dated 1992.**

Regarding Claim 1

EUROEXPERT Best Practices document discloses

*“A process for designing a model based system architecture, comprising: providing a business process design, the business process design describing a plurality of business processes and defining a set of business requirements for each business process; constructing a multi-layer mathematical model of a system architecture supporting the business process design, the layers of the multi-layer model comprising a business layer, an application layer, and a technology layer;”*

as a tiered model GATE model identical to claimed model application that collects measurements from 3 domains, namely, business domain/layer, application domain, technology/system/network domain, illustrated by a figure called “Modeling Business Value Chain” (EUROEXPERT Best Practices: Col 2). This model incorporates the business goals and characteristics of the system design. It can be seen from the reference that this model captures the business requirements for business processes as well as delegates them to 3 layers. The public knew about this model in February 1992 (EUROEXPERT Best Practices: Col 2, Lines 16-18).

Although the EUROEXPERT Best Practices article discloses the results of the 3-tiered business model, it does not teach specifically modeling the performance matrix of the for each layer, simulating, comparing them to the requirements, acceptability, proposing & modifying the matrix at appropriate layers.

White’s article teaches how six-sigma methodology can be used to perfect any process, system or component. This process has its mathematical roots in statistics.

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The process itself has six steps, namely, identify the required function, specify performance requirements, determine component variation, characterize performance and revise design to meet six-sigma mathematical requirement, repeat previous steps to get higher quality results (White: Pg 32, Col. 2, Design Example).

White & EUROEXPERT further discloses,

**"modeling performance metrics for each layer of the multi-layer model of the system architecture including continuous service of the proposed system architecture, said constructing and modeling being in a manner uninfluenced by a prior existing related system architecture and measured performance thereof;"**

as the components and their variations can be modeled using an electrical circuit example (White: Pg 33, Col. 1, D Step 3, Line 3-8). These components can then be simulated to measure their performance using various mathematical & statistical calculation, White discloses circuit example with Monte Carlo simulation (White: Pg 33, Col 2, 2<sup>nd</sup> Paragraph). The amended limitation where the "constructing and modeling being [done] in a manner uninfluenced by a prior existing related system architecture" is taught by EUROEXPERT as new architecture (Phase 2 implementing the solution) where the performance evaluations to implement new architecture (e.g. replacing hierarchical database with relational database – Phase 1: Diagnosis and Optimization) was done to propose changes. Although the changes components of core architecture reused by new architectural choices were evaluated nevertheless, indicating a capability to create new architecture (Business commentary). Please see arguments relating to re-engineering above.

White further discloses,

**"comparing the modeled performance metrics with the set of business requirements for each business process, said comparing producing respective indications of unacceptable performance metrics of one or more business processes that do not satisfy the set of business requirements defined for them based on the produced indications;"**

as results of such a simulation are compared against the expected values (White: Pg 34, Col. 1, 1-6 & Figure 4). The figure (White: Figure 4) disclosed shows the unacceptable performance as compared to the expected results.

White further discloses,

*“and determining modifications to the system architecture.”*

as replacing the instant model and taking other models & values for the sub-components to enhance and meet performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V). Modifications are suggested after the results from these simulations are gathered – i.e., in the circuit example used components of higher tolerances are suggested (White: Pg 34, Col. 1, F Step 5, Line 15-16). The reference teaches narrower versions of broader claims in the application. Here a simple electric circuit example teaches a abstract methodology that can be applied to much bigger multi-tiered system as claimed.

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to take White's teaching and apply them to EUROEXPERT - Best Practices GATE model disclosed above. The motivation to do so would be a system than can be simulated with various components to meet the requirements. Six-sigma process is disclosed as a way of doing business (White: Pg 28, Col. 1, A. What is Six Sigma, Line 6-9) to increase quality & competitive pricing (White: Pg 28, Col. 2, B “Why Pursue Six Sigma?” Line 1-6), which are also very good business motivations.

#### Regarding Claim 2

As disclosed above, White proposes performance matrix modification, update and comparison (White: Pg 34, Col. 1, 1-6 & Figure 4). He discloses the circuit

component that gives the best results for the quality/cost level (White: Pg 34, Col. 2, 1-3 & Table V). White further discloses a matrix of components with various tolerances and how they are used to access the performance of the circuit (White: Pg 33, Figure 3 & Pg 34, Table V & VI). The output of his analysis is selection of the component, which is least expensive and highest quality (White: Pg 34, Col. 2, 1-3).

#### Regarding Claim 2

As disclosed above, White proposes performance matrix modification, update and comparison (White: Pg 34, Col. 1, 1-6 & Figure 4). He discloses the circuit component that gives the best results for the quality/cost level (White: Pg 34, Col. 2, 1-3 & Table V). White further discloses a matrix of components with various tolerances and how they are used to access the performance of the circuit (White: Pg 33, Figure 3 & Pg 34, Table V & VI). The output of his analysis is selection of the component, which is least expensive and highest quality (White: Pg 34, Col. 2, 1-3).

#### Regarding Claim 3

As disclosed above, White identifies, evaluates various components required in the circuit (White: Pg 33, Col. 1, Figure 3). Searching the data store for various components is implicit, as he has already identified the all variations with different tolerances (White: Pg 33, Col. 1, Table 2).

#### Regarding Claim 4

White suggests that replacement of components be done one at a time to accurately calculate improved performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V).

Regarding Claim 5

EUROEXPERT & White do not teach modifying the business model if the supporting components models in application and technology layers have unacceptable performance metrics. However, It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to modify the business model when the supporting components models are not able to meet performance as it is well-known in the art that business model need to be changed when the underlying application or technology is unable to support the business goals.

Regarding Claim 21

Claim 21 is rejected for the same reasons as claims 1 & 2.

Regarding Claim 22

Claim 22 is rejected for the same reasons as claims 1 & 2.

Regarding Claim 23

Claim 23 is rejected for the same reasons as claims 1.

**10.Claim(s) 6-20 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over EUROEXPERT - Best Practices: French Social Security - UNEDIC dated 1992 in view of IEEE article – “An Introduction To Six Sigma With Design Example” by Robert White dated 1992, further in view of US Patent 6532465 issued to Hartley.**

Regarding Claim 6

Disclosures for EUROEXPERT - Best Practices GATE model and by White are presented above. These references do not teach mapping between the 3 GATE domain layers (Claim 6) and presence of buses in the design (Claim 7 & 8). Also there is no mention of the real-time and batch processing systems (Claim 9).

Hartley discloses that mapping between the different layers can be present attain a business objective (Hartley: Col. 5 Lines 12-32). Hartley exemplifies the mapping between the presentation layer and business later in his Figure 4 (Hartley: Col 10, Lines 50-55, Lines 64-67). But it can be seen in Figure 4 that similar mapping existing between the layers below the business layer going down towards domain (application layer) and database (physical database/technological representation layer) (Hartley: Col. 8 Lines 11-16).

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to use the layering approach, communication strategy and real-time/batch processing taught by Hartley and apply them to White/EUROEXPERT references. The motivation would be a design, which is abstract enough than can handle new business requirements without significantly changing the underlying architecture, and specific enough that the business layer

can provide rule based processing by passing in metadata. Hence, the business model would be extremely adaptive to changing business, application & technological requirements.

Regarding Claim 7 & 8

Disclosures for EUROEXPERT - Best Practices GATE model and White do not teach presence of buses in the design.

Hartley disclose message buses (Hartley: Col. 11, Lines 4648, 63-65) as means for interfacing between different layers, in broader terms buses are considered to be data conduits between different layers. Hartley explains that these layers may be located on different machine with object layers providing communication (Hartley: Col 10, Lines 24-31).

Regarding Claim 9

Disclosures for EUROEXPERT - Best Practices GATE model and White do not teach real-time and batch processing systems.

Hartley exemplarily discloses applications design that respond in real time (Hartley: Col. 13, Lines 24-31) and another one, which is, batch process driven. Batch processing example disclosed is collection of customer charges (Hartley: Col. 17 Lines 58-68) & batch report generation (Hartley: Col. 19, Lines 18-23).

Regarding Claim 10

White discloses taking other models and values for the subcomponents to enhance performance and meet performance (White: Pg 34, Col. 1, F Step 5, Line 1-8 & Table V).



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Regarding Claim 11

Claim 11 is rejected for the same reasons as claims 1, 2 & 9 are rejected. Further Hartley discloses a system that includes a rule-based engine (Hartley: Abstract Lines 12-15). The output module is the claim is equivalent to batch output component that is disclosed in Claim 9.

Regarding Claim 12

Claim 12 is rejected for the same reasons as claims 1, 2.

Regarding Claim 13

Claim 13 is rejected for the same reasons as claims 1, 2.

Regarding Claim 14

Claim 14 is rejected for the same reasons as claims 1.

Regarding Claim 15

Claim 15 is rejected for the same reasons as claims 5.

Regarding Claim 16

Claim 16 is rejected for the same reasons as claims 6.

Regarding Claim 17 & 18

Claim 17 & 18 are rejected for the same reasons as claims 7 & 8.

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Regarding Claim 19

Claim 19 is rejected for the same reasons as claims 9.

Regarding Claim 20

Claim 20 is rejected for the same reasons as claims 10.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akash Saxena whose telephone number is (571) 272-8351. The examiner can normally be reached on 9:30 - 6:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini S. Shah can be reached on (571)272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Akash Saxena  
Patent Examiner GAU 2128  
(571) 272-8351  
Friday, January 06, 2006



Fred Ferris  
Primary Examiner, 2128